

REMARKS

Claims 1-19 are all the claims pending in the application. Claims 1, 7, 11 and 18-19 have been amended.

Claims 1 and 7 have been amended to delete "[Chemical Formula 9]" and "[Chemical Formula 10]", respectively.

Claims 11 and 18-19 were amended to recite "a therapeutically effective amount" for purposes of further clarity. The amendments are directed to form only.

Claims 2-6 are indicated as being allowable if rewritten in independent form.

Entry of the above amendments is respectfully requested.

At page 4 of the Office Action, the Examiner acknowledges Applicants' election of claims 1-11 and 18-19, and requests affirmation. Applicants' affirm the election of claims 1-11 and 18-19.

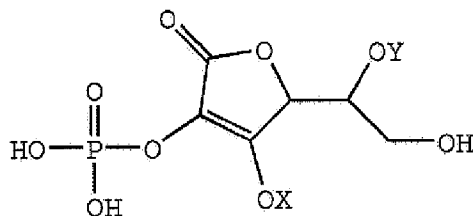
I. Response to Rejection of Claims 7-11 and 18-19 under 35 U.S.C. § 112, second paragraph

Claims 7-11 are rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite.

A. The Examiner asserts that the term "comprising" in claims 7-10 is vague and indefinite because it is not clear which compounds are reacting and how.

Applicants respectfully traverse the rejection.

Claim 7 recites "comprising a step of reacting a compound represented by the following general formula (2) and/or a salt thereof:



(2)

(wherein X and Y each represents H or a protective group for OH), with at least one selected from fatty acid, fatty acid salt, fatty acid ester, fatty acid halide, and/or fatty acid anhydride.”

To meet the requirements of § 112, second paragraph, the claims must be sufficiently definite for one to reasonably determine their scope. MPEP § 706.03(d). As currently written, the limitation of claim 7 is believed to be definite. That is, claim 7 clearly recites reacting a compound of formula (2) with at least one of fatty acid, fatty acid salt, fatty acid ester, fatty acid halide, and/or fatty acid anhydride. Therefore, it is respectfully submitted that one of skilled in the art would be apprised of the scope of the invention, and that claims 7-10 comply with §112, second paragraph.

B. The Examiner asserts that the term “a vitamin C preparation” in claim 11 is vague and unclear, and inquires whether it means the composition comprising the ascorbic acid derivatives according to any one of claims 1 to 6.

Applicants respectfully traverse the rejection.

Claim 11 recites “A vitamin C preparation comprising the ascorbic acid derivative according to claim 1 as an effective ingredient.” As noted above, to meet the requirements of § 112, second paragraph, the claims must be sufficiently definite for one to reasonably determine their scope. MPEP § 706.03(d). As currently written, the limitation of claim 11 is believed to be definite. Therefore, it is respectfully submitted that one of skilled in the art would be apprised

of the scope of the invention, that one of ordinary skill would understand that the claimed preparation is a composition comprising the ascorbic acid derivative according to claim 1, and that the claim thus complies with §112, second paragraph.

C. The Examiner asserts that claims 11 and 18-19 are self-conflicting because pharmaceutical compositions by definition must be effective yet non-toxic, and recommends incorporating "therapeutically effective amount" in the claims.

Applicants respectfully submit that one of ordinary skill in the art would be apprised of the scope of the claims without the recitation of "therapeutically effective amount." However, without acquiescing the merits of the rejection and to advance prosecution, claims 11 and 18-19 have been amended to recite "therapeutically effective amount", as suggested by the Examiner.

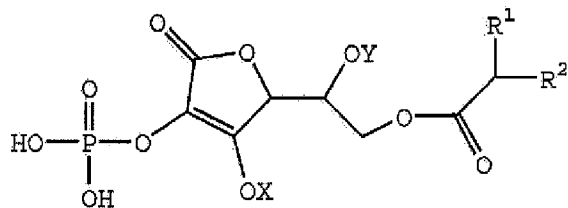
In view of the above, withdrawal of the §112 rejections is respectfully requested.

II. Response to Rejection of Claims 1 under 35 U.S.C. § 102(b)

Claim 1 is rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Toshiyuki et al. (JP 61-050908; hereinafter "JP '908").

Applicants respectfully traverse the rejection.

The present invention according to claim 1 is directed to an ascorbic acid derivative represented by Formula (1) or a salt thereof:



(1)

wherein X and Y each represents H or a protective group for OH, R¹ and R² each represents an

alkyl group having from 1 to 19 carbon atoms, which may be linear or branched, and the total number of carbon atoms in R¹ and R² is an integer of 5 to 22. The ascorbic acid derivative of formula (1) of claim 1 has a branched carboxylic acid moiety, and the total number of carbon atoms in R¹ and R² is 5 to 22. More specifically, in the branched carboxylic acid moiety, the carbon atom at the 2-position (i.e., at the α -position) with respect to the carboxylic acid functional group in formula (1) is a branched secondary carbon atom having a hydrogen atom.

Based on the structure, the ascorbic acid derivative of formula (1) according to claim 1 is liable to be incorporated into cells, and therefore it can elevate the cumulative concentration of ascorbic acid in cells. In addition, this ascorbic acid derivative of formula (1) has improved storage stability, as compared with conventional ascorbic acid derivatives. Accordingly, the ascorbic acid derivative of formula (1) according to claim 1 can be widely used for various preparations such as vitamin C preparations. Further, when the ascorbic acid derivative of formula (1) is incorporated into a cosmetic for preventing wrinkles and such, the ascorbic acid derivative has an excellent effect of accelerating collagen synthesis and of suppressing collagen decomposition, so that it can prevent or improve changes in the form or shape of skin due to aging. See page 51, the last line to page 52, line 26 of the present specification.

It is respectfully submitted that JP '908 does not disclose, teach or suggest the ascorbic acid derivative represented by formula (1) of claim 1, which not only has a branched carboxylic acid moiety (where the carbon atom at the 2-position with respect to the carboxylic acid functional group is a branched secondary carbon atom having a hydrogen atom), but also has a total number of carbon atoms of 5 to 22 in R¹ and R².

JP '908 discloses a skin cosmetic, which contains a 6-O-lower acyl ascorbic acid phosphate

salt. JP '908 also teaches many 6-O-lower acyl ascorbic acid phosphate salts (such as those recited in claim 2 of JP '908). However, JP '908 teaches only the following four kinds of ascorbic acid derivatives having a branched carboxylic acid moiety, where the carbon atom at the 2-position with respect to the carboxylic acid functional group is a branched secondary carbon atom having a hydrogen atom: 6-O-isobutyryl ascorbic acid 2-phosphate ester; 6-O-isobutyryl ascorbic acid 3-phosphate ester; 6-O-methylbutyryl ascorbic acid 2-phosphate ester; and 6-O-methylbutyryl ascorbic acid 3-phosphate ester.

All of these ascorbic acid derivatives have a total number of carbon atoms of 2 or 3 in R^1 and R^2 in the formula (1) of claim 1. Thus, these ascorbic acid derivatives described in JP '908 are clearly different from the ascorbic acid derivative of formula (1) according to claim 1.

Accordingly, JP '908 does not disclose, teach or suggest an ascorbic acid derivative represented by formula (1) of claim 1, which not only has a branched carboxylic acid moiety (where the carbon atom at the 2-position with respect to the carboxylic acid functional group is a branched secondary carbon atom having a hydrogen atom), but also has a total number of carbon atoms of 5 to 22 in R^1 and R^2 .

For the above reasons, it is submitted that JP '908 does not anticipate claim 1. Accordingly, withdrawal of the rejection is respectfully requested.

III. Conclusion

In view of the above, reconsideration and allowance of claims 1-19 is respectfully requested.

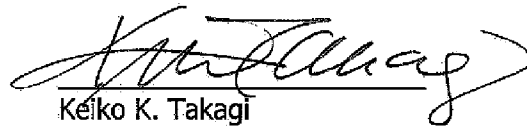
**AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No. 10/510,756**

Attorney Docket Q69644

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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